

Student Mobility During School Year Detrimental for Houston Area Students' Achievement and Attainment



Kori Stroub, PhD | Patrick Gill, MPP

November 2021

Tens of thousands of students in the Houston area switched schools during the school year annually. In moving from one school to another, students often experienced disruptions to their education. This study examined what this mobility meant for students' performance on state accountability tests, high school grade retention, high school dropout, and high school graduation.

In the state of Texas, students who changed schools during the school year saw a decline in their State of Texas Assessments of Academic Readiness (STAAR) scores. Student mobility also increased the chances a student was retained during their freshman year of high school. Finally, students who changed schools were at a higher risk of dropping out of high school and were less likely to graduate on-time (i.e., within four years).

Key Terminology

School year mobility: when a student's school of attendance changed during the school year.

Retained in 9th grade: A 9th grader that repeated the 9th grade in the following school year.

Dropped out in high school: A student that is coded by the Texas Education Agency as dropping out at any point during their high school tenure.

Graduated on time: A 9th grader that graduates from high school in the expected 4 years.

Key Findings

STAAR Scores

- Elementary and middle school students who changed schools during the school year scored lower than their non-mobile peers on STAAR assessments.
- Mobile students scored 20-35 points lower than never-mobile peers even before a school change occurred, but scored lowest in the year they were mobile.



9th Grade Retention, High School Dropout, and On-Time High School Graduation

- High school students who changed schools during the school year were roughly 30% more likely to be retained in 9th grade, 40% more likely to drop out of high school, and 7% less likely to graduate from high school on time.
- High school students who also changed campuses in middle school, or middle and elementary school, were especially likely to be retained in 9th grade, drop out of high school, and not graduate on time.

Background

Moving to a new school can be a challenging experience for students. Mobile students must find new friends, learn a new set of school rules, and adapt to new teachers and curricula. Despite these challenges, moving campuses has been a common occurrence in Houston-area public schools. During the 2012-13 through 2016-17 school years, over 300,000 school changes took place (Potter et al., 2019).

Given the ubiquity of student mobility across the Houston metropolitan area, it has been important to understand the consequences these school changes have had on students' educational outcomes. Prior research made clear student mobility tended to drag down performance and put students at higher risks for dropping out and a lower likelihood of high school graduation (Hanushek et al., 2004; Rumberger, 2003; Schwartz et al., 2017). Therefore, this brief summarizes findings from a series of analyses that looked at the consequences of student mobility in the Houston area. Particularly this brief examines the link between changing schools and students' academic achievement (STAAR scores), and educational attainment (high school grade retention, dropout, and on-time graduation)¹.

Consistent with existing knowledge, student mobility during the school year tended to be detrimental to mobile students. Particularly, student mobility lowered academic achievement and increased the risk of high school retention, dropout, and lowered the odds of on-time graduation.

Research Questions

Analyses for this report was guided by two primary research questions:

1. *Was school year mobility associated with students' academic achievement, as measured by STAAR scores?*
2. *Was school year mobility associated with students' academic attainment, as measured by 9th grade retention, high school dropout, and on-time high school graduation?*

¹ This brief has been part of a series of reports that the Houston Education Research Consortium (HERC) has released on the causes and consequences of student school mobility in Texas and Houston-Area school districts. To access other briefs from this study, please visit HERC's website [here](#).

Key Findings

1

Mobile students had lower STAAR scores overall and scored lowest among mobile peers in the year they moved.

Research Question 1: Was school year mobility associated with students' academic achievement, as measured by STAAR scores?

What was done?

HERC followed a statewide cohort of approximately 392,234 students in 4th grade in the 2013-14 school year to the 2016-17 school year, when most students were in the 8th grade. About 22% of students in the cohort – a total of 84,399 students – changed schools during the school year at least once over the four-year span. To see if mobility mattered for students' academic achievement, researchers tracked the cohort's scores on STAAR reading and math over time. The outcome was, when a student changed schools for the first time, did their scores go up, down, or stay the same. For more information on these analyses, please see the Appendix.

What was found?

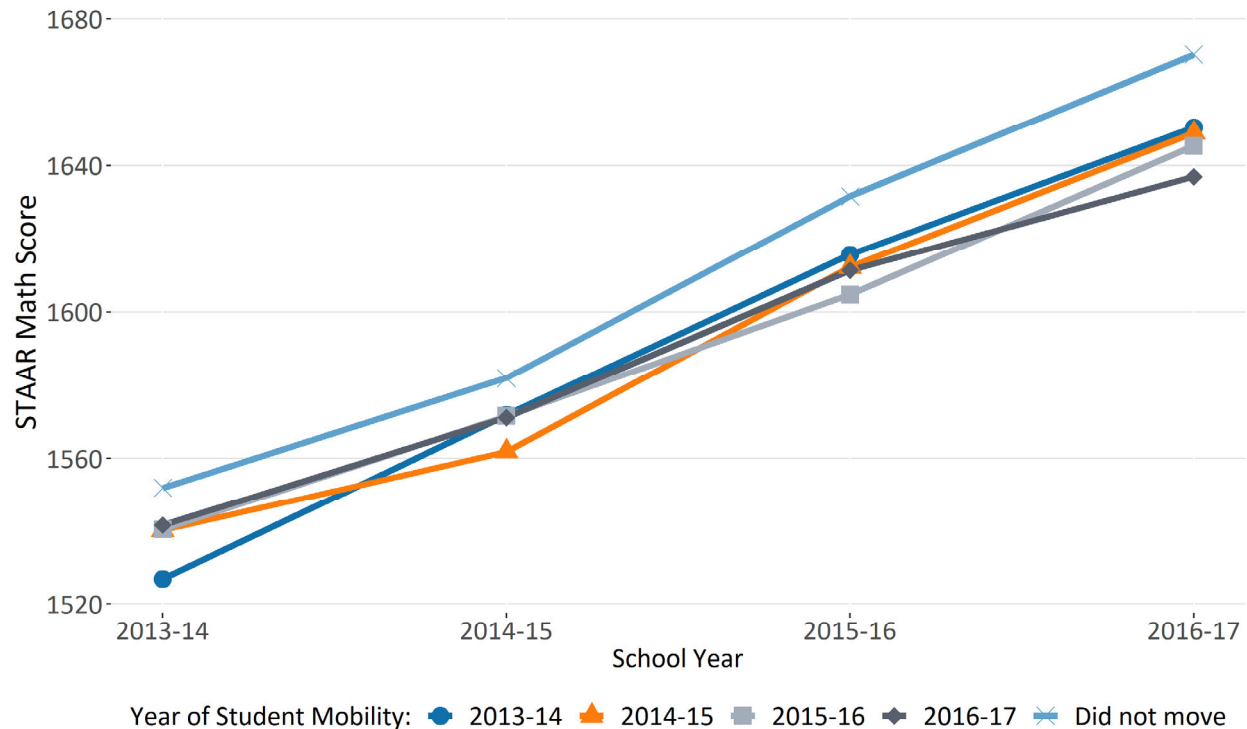
Overall, school year mobility was associated with lower performance on STAAR scores – this was true for both reading and math. Figure 1 shows the growth curves for students' STAAR math scores. There were three takeaways from Figure 1: first, mobile students scored lower on STAAR than non-mobile students (shown in light blue), even before they were mobile; second, during the year a student changed schools for the first time, their STAAR scores dipped; and third, mobile students' STAAR scores never caught up to that of their non-mobile peers.

Gap with non-mobile peers. Students who were not mobile during the study period had higher STAAR scores than their mobile peers, and this was true even before any school year mobility had taken place. Mobile students' STAAR scores were 20-35 points lower each year than their non-mobile peers. This finding corroborated the results of Gill (forthcoming), who found lower performing students were more likely to be mobile.

Scores were lowest in year student changed schools. Lowest scores in school year of mobility. In addition to scoring lower than non-mobile students during the year students changed schools, mobile students' scores dipped even further. In fact, mobile students were the lowest scoring group of all students during the year they were mobile. For example, if a student changed schools for the first time during 6th grade, they would have been expected to already have scored lower than their non-mobile peers in 4th grade and 5th grade. However, during the 6th grade year (the year of mobility), their score would have dropped further. This drop was so large at each grade that the students who had changed schools that year were the lowest scoring group; they scored lower than their peers who were never mobile and their peers who were mobile in other grades. Students scored 8-15 points lower, on average, during the year of their first school change than those who were mobile during other school years.

Key Findings

Figure 1. Mobile students scored lower on STAAR tests than peers who did not change schools.



Source: TEA PEIMS data, following cohort of 392,234 students starting in their 4th grade year in 2013-14 through their 8th grade year in 2016-17.

Note: "Did not move" refers to students who did not experience school year mobility during the study period. These students may have experienced mobility prior to or after this period.

Recovery over time. Mobile students who changed schools for the first time earlier on – in 4th grade or 5th grade – achieved higher STAAR scores by 8th grade than mobile students who didn't change schools until later on – 7th grade or 8th grade. Despite differences in the gains made by students depending on when they were mobile, no group of mobile students ever caught up to their non-mobile peers. Being mobile in earlier school years may have provided students with a better opportunity for academic gains, but those gains never resulted in mobile students closing the gap with their non-mobile peers.

2

Students that changed schools in high school were more likely to be retained in 9th grade, drop out, and not graduate on time.

Research Question 2: Was school year mobility associated with students' academic attainment, as measured by 9th grade retention, high school dropout, and on-time high school graduation?

What was done?

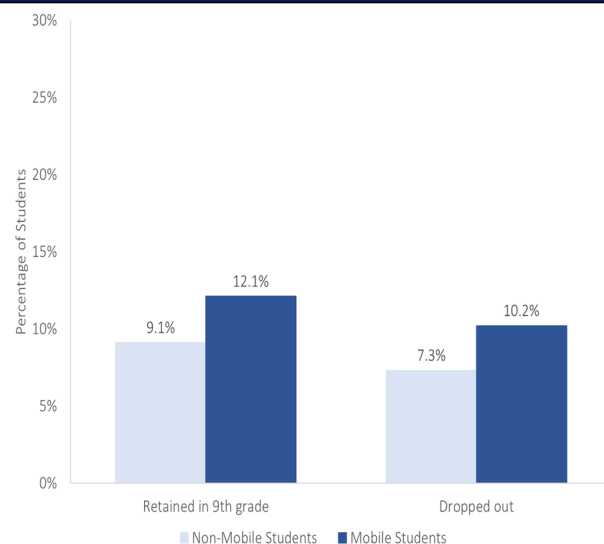
HERC followed five statewide cohorts of 9th graders in Texas from the 2010-11 through 2014-15 school years. Together, the five cohorts included approximately 2,013,637 students. Researchers focused on 9th grade cohorts because the outcomes all occurred in high school. Students in the five cohorts were tracked from 1st through 12th grades. About 17% of the students in these five cohorts—a total of 256,712 students—changed schools at least once in high school. To see if mobility mattered for students' academic attainment, researchers tracked the cohorts through high school, paying particular attention to the following 3 outcomes: 1) being retained in 9th grade, 2) dropping out in high school, and 3) graduating high school on time (in 4 years).

What was found?

Figure 2 shows high school mobility during the school year was associated with increases in 9th grade retention and high school dropout. High school mobility was also associated with decreases in rates of on-time high school graduation. Finally, researchers also found multiple school changes can exacerbate the already negative outcomes associated with school year mobility.

Retained in 9th grade. When comparing the retention rates of students who changed schools during 9th grade to comparable students who did not change schools, Figure 2 revealed the 9th grade retention rate of mobile students was three percentage points *higher* than the retention rate of non-mobile students (12.1% vs 9.1%). While a three-percentage point difference in the proportion of students retained in 9th grade seems like a small change, 9th grade mobility alone was associated with a 33% percent uptick in the proportion of mobile students who were retained in 9th grade.

Figure 2. Mobile students were more likely to be retained in 9th grade and drop out of high school.

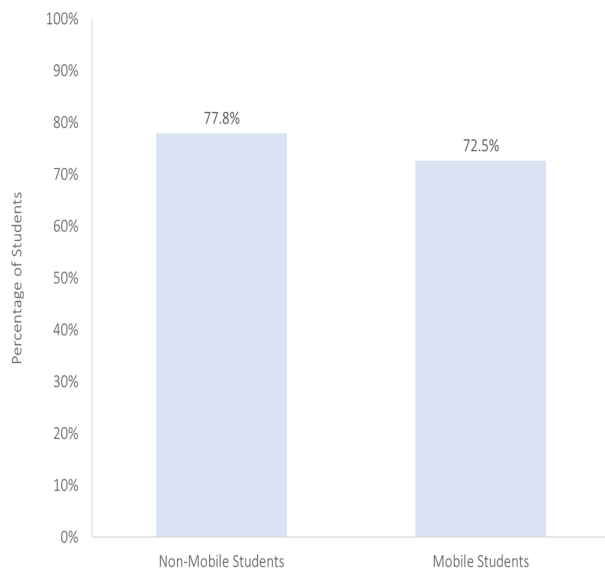


Note. When examining the effects of school year mobility on retention in 9th grade, mobile students were defined as those that moved schools at least once during their 9th grade year.

Key Findings

Dropped out of high school. When comparing the dropout rates of students who changed schools at least once in high school to comparable students who did not change schools, Figure 2 reveals the dropout rate of mobile students was 2.9 percentage points *higher* than the dropout rate of non-mobile students (10.2% vs 7.3%). Again, a three-percentage point difference in the proportion of students who dropped out in high school was a relatively small difference. However, this three-percentage point difference between mobile and non-mobile students represents a 40% uptick in mobile students' high school dropout rate.

Figure 3. Mobile students were less likely to graduate high school on time.



Graduated on time. When comparing the on-time graduation rates of students who changed schools at least once in high school to comparable students who did not change schools, Figure 3 revealed the on-time graduation rate of mobile students was 5.3 percentage points *lower* than the on-time graduation rate of non-mobile students (72.5% vs 77.8%). This suggested changing schools during high school alone was associated with a 7% decline in the on-time graduate rates of mobile students.

Multiple School Changes. Finally, researchers compared rates of 9th grade retention, high school dropout, and on-time high school graduation among mobile students who only made a school year move in high school, to the rates of students who were mobile in high school, middle school, and elementary school (i.e., multiple movers).

Figure 4. Multiple movers were even more likely to be retained in 9th grade and drop out of high school.

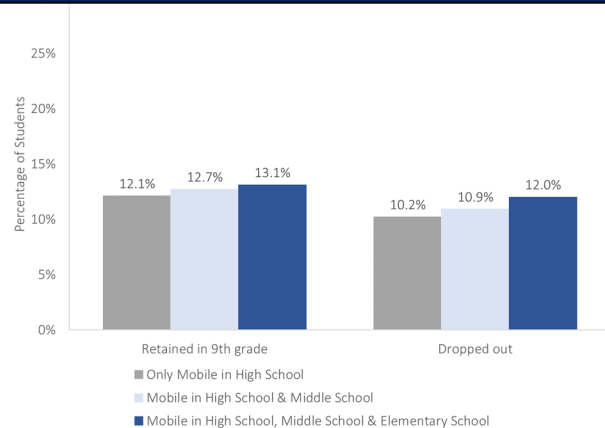


Figure 4 reveals the 9th grade retention rates of multiple movers were 0.7 percentage points *higher* than the 9th grade retention rate of students who were mobile for the first time in high school (12.8% vs 12.1%). This suggested moving multiple times across grade levels was associated with a 5.7% increase in 9th grade retention rates. Similarly, the dropout rates of multiple movers were 1.1 percentage points *higher* than the dropout rate of students who were mobile for the first time in high school (11.1% vs 10.2%). This suggested moving multiple times across grade levels was associated with a 9% increase in high school dropout rates.

Conclusion

Thousands of students in the Houston region change schools during the school year annually. Prior research suggested these moves during the school year were particularly detrimental on students' academic outcomes (Rumberger, 2003; Schwartz et al., 2017).

This research brief highlights the connection between student mobility during the school year with academic achievement and attainment with two primary takeaways. First, school year mobility was associated with lower student achievement, as evidenced by STAAR math and reading scores. Mobile students scored lower than their non-mobile peers on STAAR math and reading, and this was true across grade levels and net of a variety of other factors. Second, school year mobility had notable consequences for academic attainment. Students who moved schools during their 9th grade year were more likely to be retained in the 9th grade, and students who changed schools at any point during high school were more likely to drop out and less likely to graduate on time compared to their non-mobile peers.

In addition to school year mobility having been connected with immediate drops in students' academic achievement on STAAR reading and math tests, it also had implications for academic attainment. Research and concern focused primarily on the relationship between mobility and standardized test scores may have been too narrow and not truly captured how changing schools mid-year affects students' academic outcomes. Given the negative consequences of student mobility during high school as well as throughout their educational careers, schools and districts should explore ways to provide two forms of support to students and their families. One form of support would be to mitigate the short-term consequences of student mobility on academic achievement. The other form of support would be to mitigate the longer-term consequences of student mobility on academic attainment.

Taken together, these findings highlighted the importance of educating teachers, parents, and students on the challenges associated with changing schools during the school year and the negative consequences it can have for students' academic outcomes. Given the potential for school year mobility to disrupt student learning, districts should also consider strategies to limit school changes, even for those students who otherwise make residential changes. For instance, some districts have implemented so-called "home field advantage" programs that permitted students to stay in their original neighborhood campus even if they make a residential move into a different school's attendance zone. Even with such interventions, school year mobility is inevitable. Thus, districts and schools should consider targeting academic and other supports to incoming mobile students to help mitigate the effects outlined in this report. Finally, our findings suggest districts may want to pay particular attention to high school students who moved during the school year, particularly if they have a history of mobility. School year moves in high school seem particularly likely to cause disruptions in learning that result in negative attainment outcomes for students.

References

Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004). Disruption versus Tiebout improvement: The costs and benefits of switching schools. *Journal of Public Economics*, 88(9–10), 1721–1746.

[https://doi.org/10.1016/S0047-2727\(03\)00063-X](https://doi.org/10.1016/S0047-2727(03)00063-X)

Potter, D., Alvear, S., Bao, K., & Min, J. (2019). *Changing Schools, Part 2: Student Mobility During the School Year in Texas and the Houston Area*. Houston Education Research Consortium.

Rumberger, R. W. (2003). The Causes and Consequences of Student Mobility. *The Journal of Negro Education*, 72(1), 6. <https://doi.org/10.2307/3211287>

Schwartz, A. E., Stiefel, L., & Cordes, S. A. (2017). Moving Matters: The Causal Effect of Moving Schools on Student Performance. *Education Finance and Policy*, 12(4), 419–446.

https://doi.org/10.1162/edfp_a_00198

Suggested citation. Stroub, K. & Gill, P. (2021). Student Mobility During the School Year Detrimental for Student Achievement and Attainment in the Houston Area. Houston Education Research Consortium. Rice University.

About HERC. Focusing on the most pressing challenges facing the region, the Houston Education Research Consortium (HERC) is a research-practice partnership between Rice University and 11 Houston-area school districts. HERC research is developed directly alongside district leaders with findings shared with decision makers – culminating in long-term, equity-minded solutions, opportunities and growth for Houston and beyond.



Houston Education Research Consortium
A program of the Kinder Institute for Urban Research
Rice University | 713-348-2532
herc@rice.edu | Find us online: herc.rice.edu